Textbook Alignment to the Utah Core – 6th Grade Mathematics

This alignment has been completed using an "Independent Alignment Vendor" from the USOE approved list (www.schools.utah.gov/curr/imc/indvendor.html.) Yes _____ No X

Name of Company and Individual Conducting Alignment: Independent Contractor, Kathy Cristol
A "Credential Sheet" has been completed on the above company/evaluator and is (Please check one of the following):

☐ **On record with the USOE.**

X The "Credential Sheet" is attached to this alignment.

Instructional Materials Evaluation Criteria (name and grade of the core document used to align): 6th Grade Mathematics Core Curriculum

Title HSP Math **ISBN#: 0-15-341264-X SE; 0-15-342560-1 TE; 0-15-342561-X TE; 0-15-342562-8 TE**

Publisher: *Harcourt School Publishers*

Overall percentage of coverage in the *Student Edition (SE) and Teacher Edition (TE)* of the Utah State Core Curriculum: 100%

Overall percentage of coverage in *ancillary materials* of the Utah Core Curriculum: Ancillary materials aligned to SE specific lessons cover the same standards as that lesson.

STANDARD I: Students will expand number sense to include operations with rational numbers.

Percentage of coverage in the *student and teacher edition* for Standard I: 100 %	**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard I: 0%**

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
Objective 1.1: Represent rational numbers in a variety of ways.				
a.	Recognize a rational number as a ratio of two integers, a to b, where b is not equal to zero.	290 – 293		
b.	Change whole numbers with exponents to standard form (e.g., $2^4 = 16$) and recognize that any non-zero whole number to the zero power equals 1 (e.g., $9^0 = 1$).	20 – 23		
c.	Write a whole number in expanded form using exponents (e.g., $876{,}539 = 8 \times 10^5 + 7 \times 10^4 + 6 \times 10^3 + 5 \times 10^2 + 3 \times 10^1 + 9 \times 10^0$).	20 – 23		
d.	Express numbers in scientific notation using positive powers of ten.	76		
Objective 1.2: Explain relationships and equivalencies among rational numbers.				
a.	Place rational numbers on the number line.	40–43, 110 – 111, 118 – 121, 124–127, 290–293, 294–295		
b.	Compare and order rational numbers, including positive and negative mixed fractions and decimals, using a variety of methods and symbols, including the number line and finding common denominators.	40 – 43, 124 – 127, 252 – 255, 290 – 293, 294 – 295, H15		
c.	Find equivalent forms for common fractions, decimals, percents, and ratios, including repeating or terminating decimals.	110 – 111, 112 – 115, 116 – 117, 118 – 121, 122 – 123, 658 – 661		
d.	Relate percents less than 1% or greater than 100% to equivalent fractions, decimals, whole numbers, and mixed numbers.	122 – 123, 656 – 657, 658 – 661		

e.	Recognize that the sum of an integer and its additive inverse is zero.	256 – 257, 258 – 261		
Objective 1.3: Use number theory concepts to find prime factorizations, least common multiples, and greatest common factors.				
a.	Determine whether whole numbers to 100 are prime, composite, or neither.	90 – 91		
b.	Find the prime factorization of composite numbers to 100.	92 – 93		
c.	Find the greatest common factor and least common multiple for two numbers using a variety of methods (e.g., list of multiples, prime factorization).	94 – 97, H4–H5		
Objective 1.4: Model and illustrate meanings of operations and describe how they relate.				
a.	Relate fractions to multiplication and division and use this relationship to explain procedures for multiplying and dividing fractions.	170 – 173, 174 – 175, 176 – 179, 180 – 183		
b.	Recognize that ratios derive from pairs of rows in the multiplication table and connect with equivalent fractions.	116 – 117, 620 – 623, 624–625		
c.	Give mixed number and decimal solutions to division problems with whole numbers.	14 – 17		

Objective 1.5: Solve problems involving multiple steps.				
a.	Select appropriate methods to solve a multi-step problem involving multiplication and division of fractions and decimals.	72 – 73,184 – 187		
b.	Use estimation to determine whether results obtained using a calculator are reasonable.	TE 14, TE 568		
c.	Use estimation or calculation to compute results, depending on the context and numbers involved in the problem.	70 – 71, 662 – 665		
d.	Solve problems involving ratios and proportions.	620 – 623, 624 – 625, 626 – 629, 630 – 633, 634 – 637, 642 – 645, H28		
Objective 1.6: Demonstrate proficiency with the four operations, with positive rational numbers, and with addition and subtraction of integers.				
a.	Multiply and divide a multi-digit number by a two-digit number, including decimals.	14–17, 52 – 55, 60–63, 64 – 65, 66 – 69, 86–89, 662 – 665, 670 – 673		
b.	Add, subtract, multiply, and divide fractions and mixed numbers.	142 – 145, 146 – 149, 150 – 151, 152 – 153, 154–155, 156 – 159, 170 – 173, 174 – 175, 176 – 179, 180 – 183, 184–185, 186–187		
c.	Add and subtract integers.	256–257, 258–261, 262–263, 264–267		
STANDARD II: Students will use patterns, relations, and algebraic expressions to represent and analyze mathematical problems and number relationships.				
Percentage of coverage in the *student and teacher edition* for Standard II: <u>100%</u>		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard II: <u>0%</u>**		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
Objective 2.1: Analyze algebraic expressions, tables, and graphs to determine patterns, relations, and rules.				
a.	Describe simple relationships by creating and analyzing tables, equations, and expressions.	350–353, 354–357, 360–363, 380–381, 382–385		
b.	Draw a graph and write an equation from a table of values.	354-357, 380 – 381, 382 – 385, 389 – 390, 394		
c.	Draw a graph and create a table of values from an equation.	380 – 381, 382 – 385, 389-390, 394		
Objective 2.2: Write, interpret, and use mathematical expressions, equations, and formulas to represent and solve problems that correspond to given situations.				
a.	Solve single variable linear equations using a variety of strategies.	324–325, 326–327, 330–331, 332–333, 334–337, 339–340, H16		
b.	Recognize that expressions in different forms can be equivalent and rewrite an expression to represent a quantity in a different way.	314 – 317, 318–321		
c.	Evaluate and simplify expressions and formulas, substituting given values for the variables (e.g., 2x + 4; x = 2; therefore, 2 (2) + 4 = 8).	318 – 321		
STANDARD III: Students will use spatial and logical reasoning to recognize, describe, and analyze geometric shapes and principles.				
Percentage of coverage in the *student and teacher edition* for Standard III: <u>100%</u>		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard III: <u>0%</u>**		

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Objective 3.1: Identify and analyze attributes and properties of geometric shapes to solve problems.				
a.	Identify the midpoint of a line segment and the center and circumference of a circle.	420 – 423, 424 – 427, 456 – 459, 548 – 549, 550 – 553, H20		
b.	Identify angles as vertical, adjacent, complementary, or supplementary and provide descriptions of these terms.	408 – 411, 442 – 445, 446 – 449, H19		
c.	Develop and use the properties of complementary and supplementary angles and the sum of the angles of a triangle to solve problems involving an unknown angle in a triangle or quadrilateral.	406 – 407, 408 – 411, 442 – 445		
Objective 3.2: Visualize and identify geometric shapes after applying transformations on a coordinate plane.				
a.	Rotate a polygon about the origin by a multiple of 90° and identify the location of the new vertices.	474 – 477, 482 – 485		
b.	Translate a polygon either horizontally or vertically on a coordinate grid and identify the location of the new vertices.	482 – 485, 491, H21		
c.	Reflect a polygon across either the x- or y-axis and identify the location of the new vertices.	482 – 485, 491, H21		
STANDARD IV: Students will understand and apply measurement tools and techniques and find the circumference and area of a circle.				
Percentage of coverage in the *student and teacher edition* for Standard IV: <u>100%</u>		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard IV: <u>0%</u>**		

OBJECTIVES & INDICATORS		Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)	Coverage in *Ancillary Material* (titles, pg #'s, etc.)	*Not covered in TE, SE or ancillaries* ✓
Objective 4.1: Describe and find the circumference and area of a circle.				
a.	Explore the relationship between the radius and diameter of a circle to the circle's circumference to develop the formula for circumference.	548 – 549, 550–553		
b.	Find the circumference of a circle using a formula.	550 – 553, 595–597, H25		
c.	Describe pi as the ratio of the circumference to the diameter of a circle.	548 – 549, 550–553		
d.	Decompose a circle into a number of wedges and rearrange the wedges into a shape that approximates a parallelogram to develop the formula for the area of a circle.	580-581		
e.	Find the area of a circle using a formula.	580 – 581, 582 – 583, H26		
Objective 4.2: Identify and describe measurable attributes of objects and units of measurement, and solve problems involving measurement.				
a.	Recognize that measurements are approximations and describe how the size of the unit used in measuring affects the precision.	530 – 533		
b.	Convert units of measurement within the metric system and convert units of measurement within the customary system.	542–525, 526–527		
c.	Compare a meter to a yard, a liter to a quart, and a kilometer to a mile.	TE 526A		

d.	Determine when it is appropriate to estimate or use precise measurement when solving problems.	530 – 533, 534–535, 544 – 547, 548–549, 564 – 567, 602 – 603		
e.	Derive and use the formula to determine the surface area and volume of a cylinder.	594 – 597, 602 – 603, 604 – 605		
STANDARD V: Students will analyze, draw conclusions, and make predictions based upon data and apply basic concepts of probability.				
Percentage of coverage in the *student and teacher edition* for Standard V: 100%		**Percentage of coverage not in student or teacher edition, but covered in the *ancillary material* for Standard V: 0%**		
OBJECTIVES & INDICATORS		**Coverage in *Student Edition(SE) and Teacher Edition (TE)* (pg #'s, etc.)**	**Coverage in *Ancillary Material* (titles, pg #'s, etc.)**	***Not covered in TE, SE or ancillaries*** ✓
Objective 5.1: Design investigations to reach conclusions using statistical methods to make inferences based on data.				
a.	Design investigations to answer questions.	210 – 211, 686 – 689		
b.	Extend data display and comparisons to include scatter plots and circle graphs.	224 – 227, 379, 666 – 667, 668 – 669		
c.	Compare two similar sets of data on the same graph and compare two graphs representing the same set of data.	224 – 227, 232 – 233, 234 – 237		
d.	Recognize that changing the scale influences the appearance of a display of data.	TE 224A		
e.	Propose and justify inferences and predictions based on data.	224 – 227, 238 – 239, 690 – 691		

Objective 5.2: Apply basic concepts of probability and justify outcomes.				
a.	Write the results of a probability experiment as a fraction between zero and one, or an equivalent percent.	682 – 685, 686 – 689		
b.	Compare experimental results with theoretical results (e.g., experimental: 7 out of 10 tails; whereas, theoretical 5 out of 10 tails).	686 – 689, 694 – 697, 698 – 701		
c.	Compare individual, small group, and large group results of ability experiment in order to more accurately estimate the probabilities.	686 – 689		